

REMARKS

Claims 1-14 are pending in this application. By this Amendment, claims 1-4 are amended. No new matter is added by these amendments. Reconsideration based on the amendments and following remarks is respectfully requested.

I. 35 U.S.C. §112 Rejection

The Office Action rejects claims 1-11 under 35 U.S.C. §112, second paragraph, as being indefinite. The Office Action also rejects claims 1-11 under 35 U.S.C. §101 because "the claimed recitation of a use ... results in a claim which is not a proper process claim under 35 U.S.C. §101." The Office Action rejects claims 1-14 under 35 U.S.C. §112, first paragraph, for failure to comply with the written description requirement. The rejections are respectfully traversed.

With regard to the §112, second paragraph, and §101 rejections, Applicants respectfully submit that the claims, as amended, obviate the rejection. Withdrawal of the rejections is respectfully requested.

With regard to the §112, first paragraph, rejection to claims 1-14, the Office Action asserts that the claims do not indicate possession for a compound having a triazine skeleton at the time of filing. Applicants respectfully submit that the claims, as amended, obviate the rejection. Specifically, Applicants have amended the claim to recite a triazine *trione* skeleton. The compounds disclosed in the present application and cited by the Examiner are triazine trione compounds. The compounds of formula 2 are triazine trione compounds having an epoxy group, and the specific examples thereof include tris(2,3-epoxypropyl) isocyanurate, monoallyl diglycidyl isocyanurate and the like (see paragraph [0060] of the specification).

Additionally, the polymer having an epoxy group can be produced by polymerization of the addition of polymerizable monomers having an epoxy group with other addition of

polymerizable monomers. The polymer can be produced by reaction of a polymer having a hydroxy group with a compound having an epoxy group such as epichlorohydrin, glycidyl tosylate or the like (see paragraphs [0019]-[0021] and [0030]).

With regard to triazine trione compounds having carboxyl groups, the compounds of formula (1) are exemplified, and specific examples thereof include tris(2-carboxyethyl) isocyanuric acid, tris(3-carboxypropyl) isocyanuric acid and the like (see paragraph [0052] of the specification).

With regard to compounds having protected carboxyl groups, the specification states at paragraph [0054] as follows:

The compound with a molecular weight of 2000 or less having at least two protected carboxyl groups includes for example terephthalic acid, trimellitic acid, pyromellitic acid, isophthalic acid, tris(2-carboxyethyl) isocyanuric acid, tris(3-carboxypropyl) isocyanuric acid, adipic acid, maleic acid, itaconic acid, fumaric acid, butane tetracarboxylic acid and the like which are converted with propyl vinyl ether into a form of hemiacetal.

Further, the specification states at paragraph [0039] that the polymer having a phenolic hydroxyl group, a carboxyl group, a protected carboxyl group or an acid anhydride structure can be produced by polymerization of the above-mentioned addition of polymerizable monomers having a phenolic hydroxyl group, a carboxyl group, a protected carboxyl group or an acid anhydride structure with other addition of polymerizable monomers.

As mentioned above, the polymers and compounds having triazine trione structures are disclosed in the specification as filed, and thus these polymers and compounds should not be regarded as new matter.

Withdrawal of the rejection is respectfully requested.

II. The Claims Define Allowable Subject Matter

The Office Action rejects claims 2 and 8 under 35 U.S.C. §102(b) as being anticipated by Lees et al. (5,380,804). The rejection is respectfully traversed.

The Office Action asserts that Applicants' arguments with respect to anti-reflective coating are meritless because such feature is not mentioned in the claims. The Office Action further asserts that the rejection is "one of anticipation and inherency" and that the powdered coating of Lees "inherently have the ability to be formed into coatings which could be used in the intended methods of use set forth in instant claims 2 and 8." Applicants respectfully submit that the claimed combination of features, as supported by the specification, result in anti-reflective coating and thus mention of such feature is not necessary in the claims. Nonetheless, Applicants have amended the claims to recite this feature for clarity. Applicants further submit that the Office Action's reliance on the doctrine of inherency is misplaced. Specifically, while the powder coatings of Lees may have the ability to be formed into coatings, there is nothing in the Lees reference to suggest that the compounds of Lees are in every case a coating, and are in every case anti-reflective. Indeed, col. 1, lines 43-53 of Lees discuss the disclosed compounds having properties such as high gloss. Thus, the compositions presently claimed (they are not method of use claims) and inherent properties thereof are not by Lees.

Withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 3 and 9 under 35 U.S.C. §103(a) as being unpatentable over Kishioka et al. (either as US2004/0110096A1 or as WO02/086624A1 as evidenced by US2004/0110096A1). The rejection is respectfully traversed.

The Office Action asserts that Kishioka teaches all of the currently claimed combination of features except "a specific working example wherein a triglycidyl isocyanurate compound is mixed with a polymer having either a phenolic hydroxyl group or a carboxylic acid group." The Office Action asserts that it would have been obvious to combine triglycidyl isocyanurate with a polymer having either a phenolic hydroxyl group or a carboxyl acid group. This rationale is mere conjecture and speculation as to whether one of

ordinary skill in the art would indeed purposefully and in light of the Kishioka reference combine a triglycidyl isocyanurate containing polymer with another polymer having phenolic hydroxyl groups or including phenolic hydroxyl groups on the polymer including the triazine trione compound to effectuate an anti-reflective coating. Applicants respectfully submit that it does not. The properties inherent in Applicant's specifically claimed arrangement are not mentioned in Kishioka and there is no indication that one of ordinary skill in the art would understand such. Thus, there is no basis to assert that one of ordinary skill in the art would look to Kishioka to achieve an anti-reflective coating as a result of the claimed arrangement much less with any predictability of a successful outcome in producing such an arrangement. Withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 3 and 9 under 35 U.S.C. §102(b) as being anticipated by Derwent-Acc-No: 1986-290577. The rejection is respectfully traversed.

Specifically, the Office Action asserts that because the composition of novolak resin and triglycidyl isocyanurate has the "inherent capability" to be an undercoating, the Derwent reference anticipates the claimed composition. However, Applicants respectfully submit that Derwent fails to teach the presently claimed combination of features — Applicants' claim is to an anti-reflective coating composition and Derwent fails to teach said anti-reflective coating. Moreover, Derwent fails to teach the polymer arrangement presently claimed with a molecular weight of 2000 or less having at least two epoxy groups and a polymer compound having a phenolic hydroxyl group, carboxyl group, protected carboxyl group or an acetane hydride structure, wherein at least one of the compound in the polymer compounds has a triazine trione skeleton. Withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 3 and 9 under 35 U.S.C. §102(b) as being anticipated by Hitachi (JP 58-107312 A) and attached English abstract. This rejection is respectfully traversed.

The Office Action asserts that the composition of novolak resin and triglycidyl isocyanurate set forth by Hitachi anticipates the claimed combination of features because it has the inherent capability of being an undercoating. Again, the Office Action merely indicates a compound having a triazine skeleton. The Office Action does not indicate how the references including Hitachi allegedly teach not only the triazine skeleton but also the polymer arrangement presently claimed, i.e., a resist underlayer anti-reflective coating as explicitly required in the claims as amended. Hitachi fails to even mention anti-reflective properties. Withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 3 and 9 under 35 U.S.C. §102(b) as being anticipated by Harade et al. (EP 1 203 792 A1) as set forth in Comparative Example B4. As with all preceding rejections, the Office Action again notes that Applicants fail to explicitly claim the anti-reflective coatings. The rejection is respectfully traversed.

Restating the above, Applicants submit that the inherent property of anti-reflective coating is achieved by the specific arrangement of the polymers as claimed — this arrangement is not taught by Harade. Although Applicants need not recite this feature in the claims as it is inherent to the arrangement, Applicants have hereby amended the claims to recite anti-reflective coating. Again, the Office Action notes compounds similar to those recited in the claims, but ignores that those compounds are particularly arranged as recited to accommodate anti-reflective properties. Applicants understand that the Examiner believes inherency to be an issue, but note that for the reference to be inherently anticipatory, the disclosed compounds must achieve anti-reflective properties in all instances lest the reference fail to teach a resist underlayer anti-reflective coating. This has not been shown and is not the case, for Applicants' claimed combination of features is novel and not obvious over the asserted art of record. Applicants claims are not product by process claims, nor are they use claims, nor are they "intended use" claims. They are composition claims, specifically recited

and capable of achieving anti-reflective properties. The presently claimed combination of features accommodates, *inter alia*, a higher dry etching rate compared with photo resists in the art, and further can prevent intermixing with photoresist. This and other properties are explicitly set forth in the specification as filed. Withdrawal of the rejections is respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-14 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:RAC/lmf

Attachments:

Request for Continued Examination
Petition for Extension of Time

Date: November 19, 2007

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